

The Roundtable - Power Predictions

Edited by Alix Paultre



Moderated by Alix Paultre, Editorial Director, the Roundtable is where industry players talk about market, technology, and industry trends. This month's question is: "What application area do you feel will lead the pack in finding increased energy efficiencies in technologies or processes in 2012?"



Ian Lawee, Energy Group Marketing Manager, Analog Devices (www.analog.com) [1]

A common saying in quality management is "What you cannot measure you cannot improve." The smart grid is perhaps the largest system to put this tenet to practice. Worldwide electric usage is greater than 20 trillion kilowatt hours and growing. A 3% efficiency gain avoids adding roughly 100 nuclear power plants.

Over the past two years, utilities have rolled out large-scale smart meter and smart grid deployments. With this new infrastructure in place, utilities worldwide are just now implementing the applications and programs they expect will yield efficiency improvements.

A few initial examples that may have the most immediate impact on efficiency are programs to provide consumers with detailed information to help manage their energy usage, implementing time-of-use pricing, demand response and collecting very detailed grid monitoring data to drive preventative maintenance programs. 2012 will prove to be a year of rapid learning across multiple large-scale deployments, greatly improving the energy industry's collective understanding of the applications and programs that will yield the highest return.

The Roundtable - Power Predictions

Published on Electronic Component News (<http://www.ecnmag.com>)

The measurement and communications systems implemented to date are designed to satisfy the smart grid's unique requirements. These system-level requirements will evolve as valued applications are better understood. We can anticipate a need to improve on the building blocks of these systems and increased communications components performance to improve connectivity and latency. There will also be an increased need for measurement components to improve analytical measurements at different locations within the electric grid.



Keith Westrum, Director Strategic Business Development, Microsemi Power Products Group (www.microsemi.com) [2]

While many of our customers talk about energy efficiency associated with their designs, the residential/commercial solar inverter market currently lead the pack in 2011 squeezing the most efficiency from their systems. One simple reason for this is it's one of their main selling points; Greater efficiency translates directly to increased sales. However, inverter efficiencies are already in the mid-to-high 90's and the room to improve is diminishing while the incremental gains are becoming more difficult to achieve. We believe the focus in this market segment for 2012 will be directed more towards reducing system cost.

At the same time, our Electric Vehicle (EV) customers are increasing their emphasis on efficiently charging vehicles; especially in fleet situations. As a result, this will be the group most likely to lead the pack in finding more energy efficiency in their designs in 2012.

Fleet EV suppliers are growing their businesses not just on zero emissions, lower cost, and lower maintenance, but also are beginning to use their expertise in charging a large number of vehicles in one location to promote the total reduction in electrical usage. As a result, total efficiency will become more important for these fleet sales opportunities and will drive increased efficiency in this market segment.

The Roundtable - Power Predictions

Published on Electronic Component News (<http://www.ecnmag.com>)



Dr. Dian Yang, GM and SVP of Product Management, Apache Design (www.apache-da.com) [3]

Though power is pervasive in every aspect of our daily life, from the electricity in our home, office, car, to the use of numerous consumer electronics products, there are some application areas that will be a focus in the upcoming years. New power technologies will need to leapfrog traditional power plants and infrastructure, and as renewable energy sources such as solar and wind are harvested and deployed, the industry must find ways to connect those power sources to the dated existing electric grids. The use of smart grid technologies can address the technical challenges in producing and distributing efficient and reliable energy. It can optimize the use of resources, while delivering equal or superior performance compared to traditional methods. At the heart of emerging smart grid technologies is smart electronics, which will enable integrated communications across the grid, advanced sensing and control methods such as the measuring and monitoring of electric power parameters, and analysis of real-time conditions to aid in decision-making. To foster design and commercialization of this complex system requires engineering simulation software to model the entire system and provide an accurate response behavior to varying conditions.

The relentless demand for extended battery life and reduced energy cost for mobile and consumer electronics products will continue to push engineers into developing new techniques that will lower both standby power and operating voltages. For example power-gating, or shutting down logic blocks on a chip when not needed can reduce operating power consumption. Application software can control the on/off state of various application processing units in order to manage the power used by the system. Other design techniques such as 3D or stacked-die designs also reduce power but can impact thermal and stress related issues. A power budget defines the available power for a given IC design. Early planning and prediction, along with a consistent analysis and optimization methodology throughout the IC design process, helps to meet the power budget target and ensures the designs' power integrity. Whether the market driver is smart electronics or low power technology, modeling and simulation of the system along with its environment is critical for the development of successful future products.

Source URL (retrieved on 12/22/2014 - 10:16am):

<http://www.ecnmag.com/articles/2011/11/roundtable-power-predictions>

Links:

[1] <http://www.analog.com/>

[2] <http://www.microsemi.com/>

The Roundtable - Power Predictions

Published on Electronic Component News (<http://www.ecnmag.com>)

[3] <http://www.apache-da.com/>